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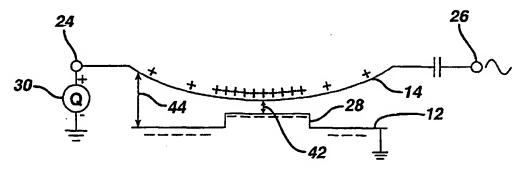
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(54) Title: CAPACITIVE MICROMACHINED ULTRASONIC TRANSDUCERS



(57) Abstract: An ultrasonic transducer is formed by a plurality of cMUT cells (10), each comprising a charged diaphragm plate (14) capacitively opposing an oppositely charged base plate (12). The diaphragm plate (14) is distended toward the base plate (12) by a bias charge. The base plate (12) includes a central portion (28) elevated toward the center of the diaphragm plate (14) to cause the charge of the cell to be of maximum density at the moving center of the diaphragm plate (14). For harmonic operation the drive pulses applied to the cells (10) are predistorted in consideration of the nonlinear operation of the device to reduce contamination of the transmit signal at the harmonic band. The cMUT cells (10) can be fabricated by conventional semiconductor processes and hence integrated with ancillary transducer circuitry such as a bias charge regulator (30). The cMUT cells (10) can also be fabricated by micro-stereolithography whereby the cells (10) can be formed using a variety of polymers and other materials.

# INTERNATIONAL SEARCH REPORT

Inter 'onal Application No PCT/EP 01/06479

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B. FIELDS SEARCHED								
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Documenta	tion searched other than minimum documentation to the extent t	that such documents are included in the fields so	earched					
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'A' document defining the general state of the art which is not considered to be of particular relevance  'E' earlier document but published on or after the international		or priority date and not in conflict with cited to understand the principle or th invention	<ul> <li>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</li> <li>"X" document of particular relevance; the claimed invention</li> </ul>					
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